

CLAIMS

- 1 1. A magnetic random access memory circuit, comprising:
2 a sensor for producing a sensor signal representing a sensed external condition
3 that affects performance of the magnetic memory; and
4 a compensation circuit for compensating for the sensed external condition.
- 1 2. The circuit of claim 1 wherein the compensation circuit is configured to
2 adjust the write current for word and bit lines of the magnetic memory by an amount
3 required to substantially compensate for the sensed external condition.
- 1 3. The circuit of claim 1 wherein the compensation circuit is configured to
2 reduce the write current for the word and bit lines by an amount required to
3 substantially compensate for a sensed external magnetic field.
- 1 4. The circuit of claim 1 wherein the compensation circuit comprises a
2 magnetic field generator that generates a compensating magnetic field to substantially
3 compensate for the sensed external condition.
- 1 5. The circuit of claim 4 wherein the magnetic field generator comprises a
2 solenoid for generating the compensating magnetic field.
- 1 6. The circuit of claim 1 wherein the sensor comprises a magnetometer for
2 sensing an external magnetic field.

1 7. The circuit of claim 6 wherein the magnetometer is integrated with the
2 magnetic random access memory circuit in a single package.

1 8. The circuit of claim 6 wherein the magnetometer is integrated with the
2 magnetic random access memory circuit in a single integrated circuit.

1 9. The circuit of claim 1 wherein the sensor comprises a thermocouple for
2 sensing a temperature of an operating environment of the magnetic random access
3 memory circuit.

1 10. The circuit of claim 9 wherein the compensation circuit comprises a
2 temperature controller for altering the temperature of the operating environment.

1 11. The circuit of claim 1 wherein the compensation circuit comprises a
2 remote memory for storing compensation information.

1 12. A method of compensating for changes in an operating environment of a
2 magnetic memory array comprising the steps of:
3 sensing a change in the operating environment of the magnetic memory array;
4 and
5 compensating for the sensed change in the operating environment.

1 13. The method of claim 12 wherein sensing a change in the operating
2 environment comprises sensing a change in a local magnetic field.

1 14. The method of claim 13 wherein compensating for the sensed change
2 comprises adjusting a write current for word and bit lines of the magnetic memory
3 array by an amount required to compensate for the sensed change.

1 15. The method of claim 14 wherein compensating for the sensed change
2 comprises reducing the write current for the word and bit lines by an amount required
3 to compensate for the sensed change.

1 16. The method of claim 12 wherein the sensed change is a change in a local
2 magnetic field and the method comprises generating a compensating magnetic field to
3 compensate for the sensed change.

1 17. The method of claim 16 comprising generating the compensating field
2 with a solenoid.

1 18. The method of claim 12 wherein the sensed change is a change in a local
2 temperature.

1 19. The method of claim 18 wherein compensating for the sensed change
2 comprises maintaining the local temperature at a substantially constant temperature.

1 20. An information handling system comprising:
2 a first magnetic memory array;
3 a first sensor positioned near said first magnetic memory array for sensing a
4 local operating condition of said first magnetic memory array; and
5 a first compensation circuit for substantially compensating for said sensed
6 local operating condition.

1 21. The information handling system of claim 20 further comprising:
2 a second magnetic memory array;
3 a second sensor positioned near said second magnetic memory array for
4 sensing a local operating condition of said second magnetic memory array; and
5 a second compensation circuit for substantially compensating for said sensed
6 local operating condition.

1 22. The information system of claim 21 further comprising a network
2 connection for transferring information between said first magnetic memory array and
3 said second magnetic memory array.

1 23. The information system of claim 22 comprising a remote memory that is
2 not affected by local conditions for storing compensation information used by said
3 compensation circuits.